Bee-ing Ramsey:
Planning Pollinator Habitats

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City of RAMSEY

Resilient Communities Project
University of Minnesota
Building community-university partnerships for sustainability

The project on which this report is based was completed in collaboration with the City of Ramsey as part of the 2017–2018 Resilient Communities Project (RCP) partnership. RCP is a program at the University of Minnesota's Center for Urban and Regional Affairs (CURA) that connects University faculty and students with Minnesota communities to address strategic projects that advance local resilience and sustainability.

The contents of this report represent the views of the authors, and do not necessarily reflect those of RCP, CURA, the Regents of the University of Minnesota, or the City of Ramsey.

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Bee-ing Ramsey

Planning Pollinator Habitats

1 INTRODUCTION

The creation, protection, and renewal of pollinator habitats is critical to preserving and strengthening the rural roots of the City of Ramsey. Promoting pollinator habitats can be achieved by encouraging the conservation of natural environments and implementing sustainable landscapes in both rural and urban locations.

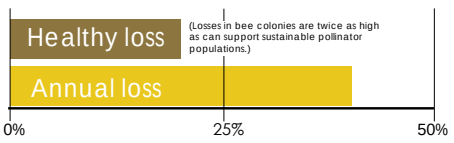
PROMOTING POLLINATOR HABITATS

Pollinators and their habitats play an important role in many aspects of daily life. In recent years their numbers have drastically declined, impacting the productivity of many rural landscapes.

THE KEY FACTOR IN HABITAT LOSS

- **Clearing** of agricultural and natural land for development is a **major loss** in land suitable for pollinator habitats.
- Mono-cultural landscapes in urban developments provide **inadequate natural resources** for pollinator populations.
- Chemical treatment **damages** natural landscapes and **inhibits pollinators' biological functions** beyond initial location of the chemical application.

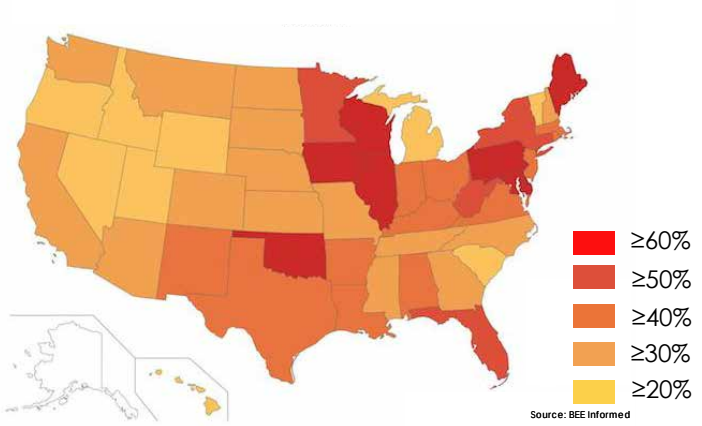
2014-15 Commercial Bee Colony Loss



The ability of bee colonies to sustain healthy population numbers has been impacted by development through loss of habitat and pesticide use.

Source: BEE Informed

Bee Colony Losses (%) in the U.S.



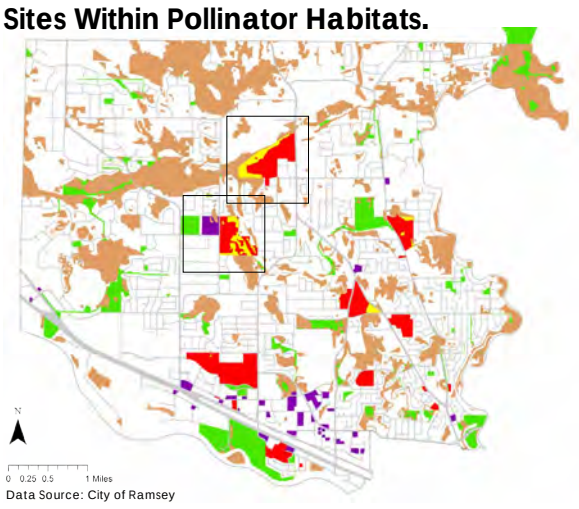
Source: BEE Informed

Loss of commercial bee colonies throughout the United States, as seen above, is greater than the ability of the colonies to regenerate, causing continual population decline. Minnesota is a state that is experiencing losses at or above 50%, which will impact both producers and consumers.

SUITABLE POLLINATOR HABITATS AND FUTURE DEVELOPMENT

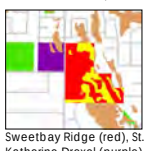
Urban development in Ramsey has negatively impacted natural areas that are critical for pollinator health. It is important to consider conserving existing habitats and increasing native pollinator vegetation in existing developments.

High-Risk Urban Development Sites Within Pollinator Habitats.



Data Source: City of Ramsey

Brookfield Development



Sweetbay Ridge (red), St. Katherine Drexel (purple)

- Commercial
- Park Space
- Natural Biomes
- Single family
- High risk habitat areas

Native undeveloped landscapes provide resources for pollinators and other wildlife, as well as providing **economic** and **environmental benefits** in Ramsey. The city contains **significant areas of wetland** and other natural environments that are crucial for maintaining **environmental quality** for residents. They also provide centrally located pollinator habitats that are **highly visible** and **aesthetically pleasing**. Many of the future and recent urban developments in Ramsey are located near these **areas of significant natural resources**. Considering the possible negative impacts of urban development on the environment, the **rural character and landscape** that Ramsey residents hold in high regard may be at risk as the community develops.

Alpine Park

Rum River

Draw Pond

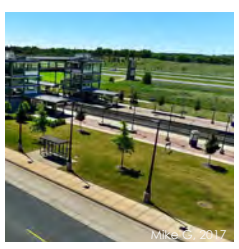
POLLINATOR LANDSCAPE STRATEGIES FOR DEVELOPING CITIES

The City of Ramsey is poised to be a leader in planning for pollinators by addressing urban expansion into its natural landscapes. Residents can advocate for pollinator landscape strategies to improve the productivity and abundance of the natural landscape in Ramsey.

Single-Family Residential

Standard suburban developments can provide small niches for pollinators.

- **Convert areas of turf to flowering grasses**
- **Leave decaying plant material in place**
- **Populate open soil with diverse natives**
- **Provide constructed dwellings for pollinators**



Open Space

Large, continuous natural landscapes provide the necessary resources for a pollinator to thrive.

- **Mix in native grasses and flowers turf**
- **Use larger plots for park space**

Apartment and Mixed Use

Large complexes can incorporate smaller green spaces not typically available to pollinators.

- **Use green roofs to support vegetation**
- **Use balcony spaces for native plantings**
- **Plant native trees and landscapes nearby**

Highways

Transportation corridors provide connections between different habitats, supporting increased diversity.

- **Line corridors with native flowering plants**
- **Loosely cover earth for ground dwellings**

Project outline:

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Pollinators: Types and Habitats

2 POLLINATORS

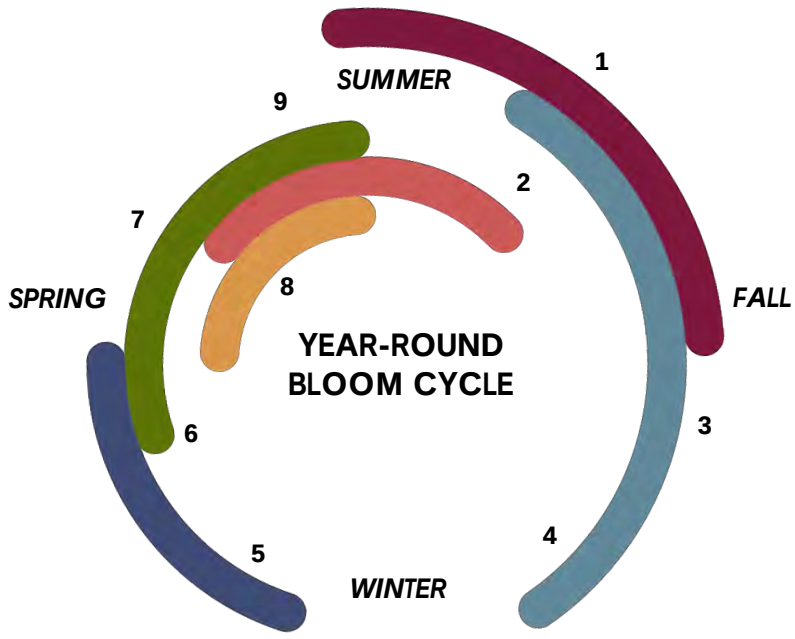
Pollinators contribute to a stable ecosystem by moving pollen from one plant to another, allowing plants that prevent soil erosion to reproduce. These plants are crucial for buffering waterways and facilitating habitats for other living organisms. In this poster we take a close look at pollinators and how they relate to landscape strategies.

ESSENTIAL POLLINATOR FLORA

Some essential flora for pollinators include **colorful flowering trees and shrubs, native grasses, and herbs.**

Ensuring that there are various types of **native flora year-round** in the city of Ramsey is a crucial strategy for maintaining pollinator habitats and populations. In addition, the **removal of invasive plant and weed species** will also aid in pollinator protection. Native plants can **withstand harsh winters,** and require less water.

The figure to the right offers some suggestions for plants that are native to Minnesota.




1 Milkweed


2 Oregano


3 Calico Aster


4 Stiff Goldenrod


5 Willow


6 Virginia Waterleaf


7 Golden Alexander


8 Goatsbeard


9 Sunflower

ESSENTIAL POLLINATOR FAUNA

BEES: With **400 native species** in Minnesota, bees are some of the best documented pollinators. They are **vital for agriculture** in the state. Unfortunately, there has been a **dramatic decline** in bee population in recent years due to **lack of floral resources** and **toxic pesticides**.

MOTHS: Moths are predominately **night-time pollinators**. They are mostly attracted to sweet-smelling, pale flowers that are more easily located after dark.

BUTTERFLIES: Butterflies, akin to moths, are diurnal and are primarily **attracted to brightly colored flowers** that exist in clusters. They require a **flat-landing surface** and enjoy living around **water permeated environments**.

BEETLES: Beetles play a role in pollinating **various types of plants**, including large, solitary day-opening flowers. Beetles rely strongly on their **sense of smell,** so they are associated with pollinating flowers that are aromatically sweet, spicy, or fermented.

FLIES: Flies are generalist pollinators, mainly pollinating flowers that **bloom in the shade**. They are essential for pollinating small, ornamental flowers with strong, putrid scents.

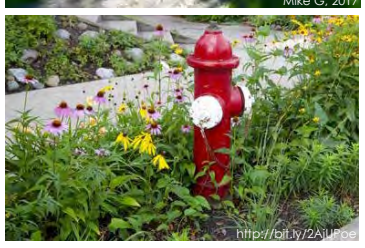
BIRDS: Birds are mainly pollinators for **tubular flowers.** Hummingbirds are a key player for these flower shapes. Due to their poor sense of smell, birds are not attracted to flowers by scent. However, **bright colors** and an **abundance of nectar** are attractors for birds.

HOTSPOTS: When identifying prospective locations for pollinator habitat, it is essential to maximize green space.

Residential: Residential gardens can offer small-scale, **edible food production**. Flower gardens are **simple additions** that benefit both the homeowner and pollinators.

Balconies: Urban rooftops and balconies can make use of **neglected space**. Due to the harsher environment, these spaces are **ideal for herbs** and other edibles, such as tomatoes.

Public Parks: Parks and trails allow for **bigger-scale plantings**, such as flowering trees and shrubs. In addition to providing pollinator habitat, they can provide a **cooling effect** in warmer months and **cleaner air** quality.



Infrastructure: Boulevard plantings allow for **native grasses** and **flowering species** that can simultaneously attract pollinators and the gaze of passersby.

There are many suitable pollinator environments found in Ramsey's urban and rural areas. In the next poster, we will look at existing biomes in Ramsey, as well as various programs and policies in place to protect the natural habitat.

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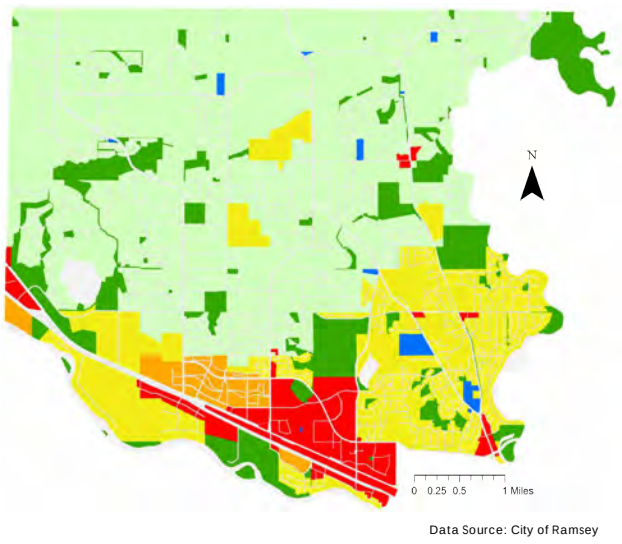
Promoting and Protecting Natural Habitat

3 HABITAT

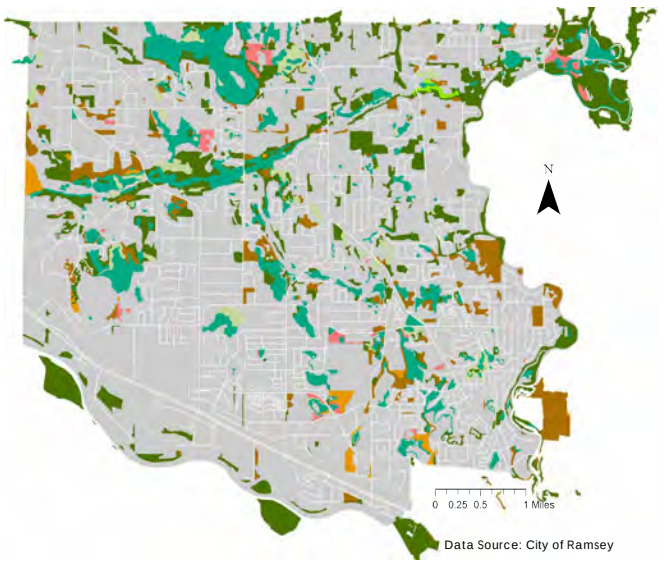
Ramsey has diverse natural areas which are fundamental to the historic rural character of the city. This poster explores the make up of these natural areas, Ramsey's pollinator policies, and the timeline of environmental policies that have promoted and protected the natural environment.

EXISTING BUILT ENVIRONMENTS



- The ***Existing Built Environments*** map to the left shows a visual representation of the various uses of land, according to City of Ramsey officials.
- The **predominance of rural areas and parks** throughout the city indicates the potential for introducing pollinator friendly habitats in open spaces, but the **remaining residential, public, mixed, and commercial areas** are also suitable for incorporating pollinators.

EXISTING BIOMES AND CANOPY COVER



- The ***Existing Biomes and Canopy Cover*** map to the left identifies biome types in Ramsey as well as areas with canopy cover – that is, the **area covered by the leaves of trees.**
- Knowing the locations of biomes and canopy coverage is important to **determine ideal plant species to inhabit areas**. Because pollinators have preferences for certain flowering plants, identifying areas where those plants can thrive is an initial step towards creating pollinator habitats.

POLLINATOR POLICIES IN RAMSEY: Policies that help local government and community to act in preserving and protecting pollinators.

MAYORS FOR MONARCHS

Mayors around the country are **pledging to create habitats for pollinators** and **educate their community members** regarding the importance of pollinators. Mayors commit to specific actions that fit their city to create a strategic plan. **Mayor Strommen** has identified potential actions below:

Link: http://bit.ly/2AJTZSk

Action Points for Ramsey

- Raise awareness of the decline of pollinators
- Plant a monarch demonstration garden
- Get citizens involved
- Native-plant friendly mowing practices
- Integrate milkweed on City property
- Ban neonicotinoid pesticides

TREE CITY USA

Tree City USA is a **national program** that recognizes cities and communities that are taking active steps to foster urban forests. **Ramsey has been a Tree City for 21 years** and counting.

Link: http://bit.ly/2ASLvJq

Benefits

- Urban forests planted around buildings can save the city and residents money on energy bills up to 25%.
- Trees also provide storm water management which reduces stress on infrastructure. (See *Rehydrate Ramsey*)

COMMUNITY GARDENS

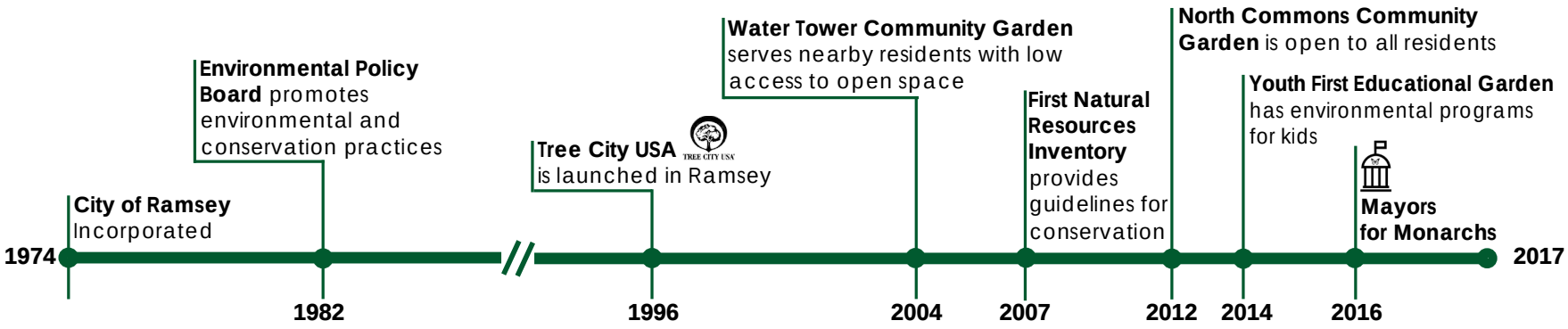
There are **three community gardens in Ramsey** that **provide local food** and opportunities for **environmental education** for students and local residents.

Youth First: http://bit.ly/2kIM9II
North Commons: http://bit.ly/2A0T3cL Water Tower Gardens

Benefits

- Gardens decrease water runoff, improve soil and air quality, and provide diverse habitats for pollination, all which lead to more productive agriculture.
- **Water Tower** Established 2004
- **North Commons** Established 2012
- **Youth First Educational Garden** Established 2016

TIMELINE OF ENVIRONMENTAL POLICIES IN RAMSEY: A majority of Ramsey's environmental policies have been enacted within the past 20 years to protect the rural characteristics of the community.



Ramsey is working to formalize natural resource protection through community engagement, organizations, and pledges. We will be looking at four common land uses within Ramsey—single family residential, high density residential, public space, and highways—to address pollinator friendly policies and best practices.

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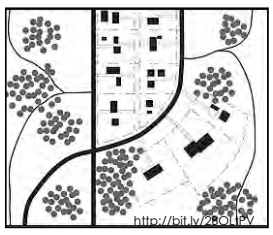
Municipal Ordinances and Best Practices

4 ORDINANCES

Many cities in Minnesota have adopted effective pollinator ordinances and policies. The City of Ramsey can learn from these best practices to preserve and protect pollinator habitats within the city. In this poster, we look at various municipal ordinances and best practices from communities within Minnesota.

POLLINATOR LANDSCAPE CASE STUDIES

Jackson Meadows



Characteristics: Rural Residential
Scope of Work: Planned unit development
Location: St. Croix, MN

Jackson Meadows was a rural community that highly valued its surrounding open space.

Best Management Practices: Smaller cluster developments with placement close to neighboring lots. Surrounding landscape is leased for protection and designated for wildlife. These open spaces are connected by trail.

Regulation and Ordinances

- Implementation of cluster development
- Conservation easements were obtained to protect surrounding natural landscape.

Source: Jackson Meadows

Wildflower at Lake Elmo

Characteristics: Urban Medium Density Residential
Scope of Work: Planned Unit Development
Location: Lake Elmo, MN

Wildflower encourages beneficial pollinator landscapes that support diverse wildlife and enrich residents' lives.

Best Management Practices: Creation of a native plant trail along a portion of the promenade. Conservation easements were given by developers for designated open space.

Regulations and Ordinances:

- Home sites required to contain at minimum 100 square feet of pollinator plantings
- Land easement given to City of Lake Elmo to preserve remaining wetland open space.

Source: Lake Elmo

Green Living Apartments

Characteristics: Urban Complex
Scope of Work: Apartment as built
Location: St. Paul, MN

Green living apartments created pollinator habitat within the small plots of land outside the apartment buildings.

Best Management Practices: Creating areas of pollinator habitat within dense urban areas.

Regulations and Ordinances:

- Pollinator plantings are considered to be a "worthwhile aesthetic improvement" in line with St. Paul zoning requirements.

MnDOT Highway Pollinator Plantings

MnDOT manages open space throughout the state, including many pollinator friendly plantings.

C. L. Dees Nature Trail

This trail is located within the Sandhill Crane Wildlife Refuge, and is lined with native plants. The trail is an easy walk, making it accessible to most residents.

Edgewater Condominiums Green Roof

This green roof is 3,800 square feet and has saved over 70,000 gallons of water from entering the sewers by using native plants.

NATIVE LANDSCAPE ORDINANCES

The language in land use ordinances is very important for promoting and preserving pollinator habitat because it sets the rules and regulations for the appearance and quality of the habitat. The following cities throughout Minnesota have adopted ordinance language that promotes pollinators. Best practices are highlighted below.

Pollinators need large areas, with habitat and nesting grounds that are clearly delineated

Burnsville: Defining the Key Terms

- "Meadow Vegetation: Grasses and flowering broadleaf plants that are **native to, or adapted to the state of Minnesota,** and that are commonly found in **meadow and prairie plant communities**, except weeds."
- "Turf Grasses: Grasses commonly used in **regularly cut lawn areas**, such as bluegrass, fescue and rye grass blends, and non-woody vegetation interspersed with them."

Native Planting Ordinances

- "**The prior vegetation is eliminated** and the native vegetation is planted through **transplanting** or seed by human or mechanical means."
- "If weeds cover more than twenty five percent of the planting, it must be **cut to a height of no more than eight inches** (8") at least once per year."
- "A **sign is posted** on the property in a location likely to be **seen by the public**, advising that a meadow or prairie is being established."

Pollinators need connected habitats in order to travel. These need to be specifically designated.

White Bear Lake: Native Grass Ordinances

- "Native grasses **indigenous to Minnesota**, planted and maintained on any occupied lot or parcel of land, setback a **minimum of twenty feet** (20') feet from the front property line as part of a garden or landscape treatment are exempt from this ordinance."

St. Paul: Park Designation Criteria

- "Areas representing **significant landforms**, native plant communities, **sensitive habitat**, or historical events."
- "Areas containing **vegetation identified as endangered or threatened**, or that provide **habitat for animals** identified as endangered, threatened, or of special concern under 15 U.S.C. §1531 et seq. or Minn. Stats. § 84.0895, and rules adopted under these respective laws."

Different pollinators need varying types of pollinating plants to provide different functions.

Mankato: Designing for a Greener Environment

- "**Preserving** existing healthy and long-lived trees whenever possible."
- "**Designing** drainage facilities to **promote** the use and **conservation** of natural watercourse and patterns of drainage."
- "**Minimizing** alterations to existing topography in environmentally sensitive areas."

Designing for Visually Pleasing Landscapes

- "Promoting the use of plant material **compatible with the climate** of the region and micro-climate conditions on the site."
- "**Ensuring** that plant material can be **maintained for long-term health** and continued growth."
- "Ensuring that the arrangement of required landscaping produces the **desired visual effect**."

Ramsey can expand on current practices and ordinance language to more fully promote and protect pollinator habitats within the city. In the following poster, we begin looking at how pollinator habitats can be integrated into residential landscapes.

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Single-Family Residential

5 RESIDENTIAL

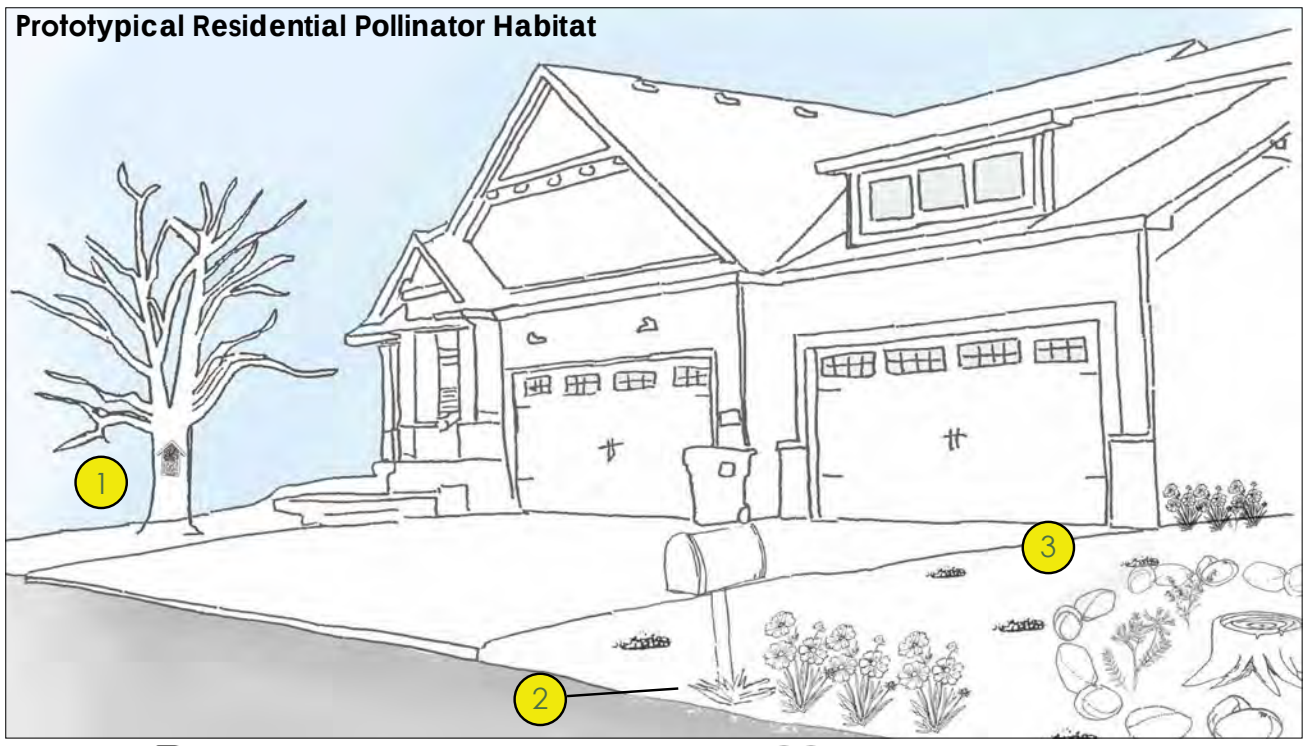
Manicured yards do not have the capacity to sustain pollinator populations. There are many benefits to incorporating native plantings into a single-family home. This poster examines the landscapes of suburban homes and addresses how families can benefit environmentally, economically, and equitably by incorporating pollinator-friendly habitats.

Bee box or hotel

Rain garden

Standing log

Prototypical Residential Pollinator Habitat



ECONOMIC BENEFITS

- Because native plants need **much less watering**, residential water usage will decrease, helping to **avoid high water bills.**
- The Environmental Protection Agency (EPA) estimates that over a 20-year period, the **cost of maintaining native landscapes** totals about $3,000/acre, versus $20,000/acre for non-native turf lawns.

ENVIRONMENTAL BENEFITS

- 20% of landfill waste is yard clippings. If yards are mowed less frequently, it will be a **win-win** for both residents and pollinators.
- Increased plant diversity will **improve soil quality,** resulting in **less water runoff** and replenishing ground water sources.
- Residents can help **improve air quality** throughout the entire city by cultivating native gardens. Native plants not only pull and store excess carbon dioxide from the air, they also help **mitigate air pollution** by eliminating the need for constant mowing.

EQUITABLE BENEFITS

- Inviting pollinator presence and pollination throughout the city, and effectively the county, will **provide healthy, locally grown produce to feed families.** This allows all residents of Ramsey to have **equal access to nutritious foods** free from excessive commercial pesticides.

CHALLENGES	OPPORTUNITIES	IMPLEMENTATION
• Building residential homes without considering natural resources reduces pollinator habitats, which provide nesting areas and environmental services.	• Include habitat in built environments to maximize potential habitats for pollinators.	• Leave tree stumps and fallen logs for pollinator reproduction • Use native flowering plants • Fill a birdbath with gravel and water for pollinators • Plant dense shrubs for nesting
• Open spaces ideal for pollinators are disconnected in residential areas, making it difficult for pollinators to access resources needed for survival.	• Front and back yards can be useful connectors because they provide livable ecosystems for pollinators.	• Apply landscaping ordinances in residential areas designed to maintain native plant species beneficial for pollinators
• Increasing the diversity of plant types on private properties can dramatically increase pollinator presence.	• There is an important distinction between unfettered growth of lawns and actively making the switch to native plants that require less grooming and provide more biodiversity.	• Draft weed ordinances for Ramsey • Encourage lawns to be at least 3.5” • Incentivize native grasses over common turf-lawns

**See poster 9 for Ramsey-specific opportunities*

Native habitats in the landscape of single-family homes, both by City regulation and residential maintenance, will help preserve the rural character of Ramsey while decreasing economic costs of upkeep. In the next poster, we explore mixed-use developments and how they can maximize pollinator habitats in an urban space.

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Apartments and Mixed-Use Developments

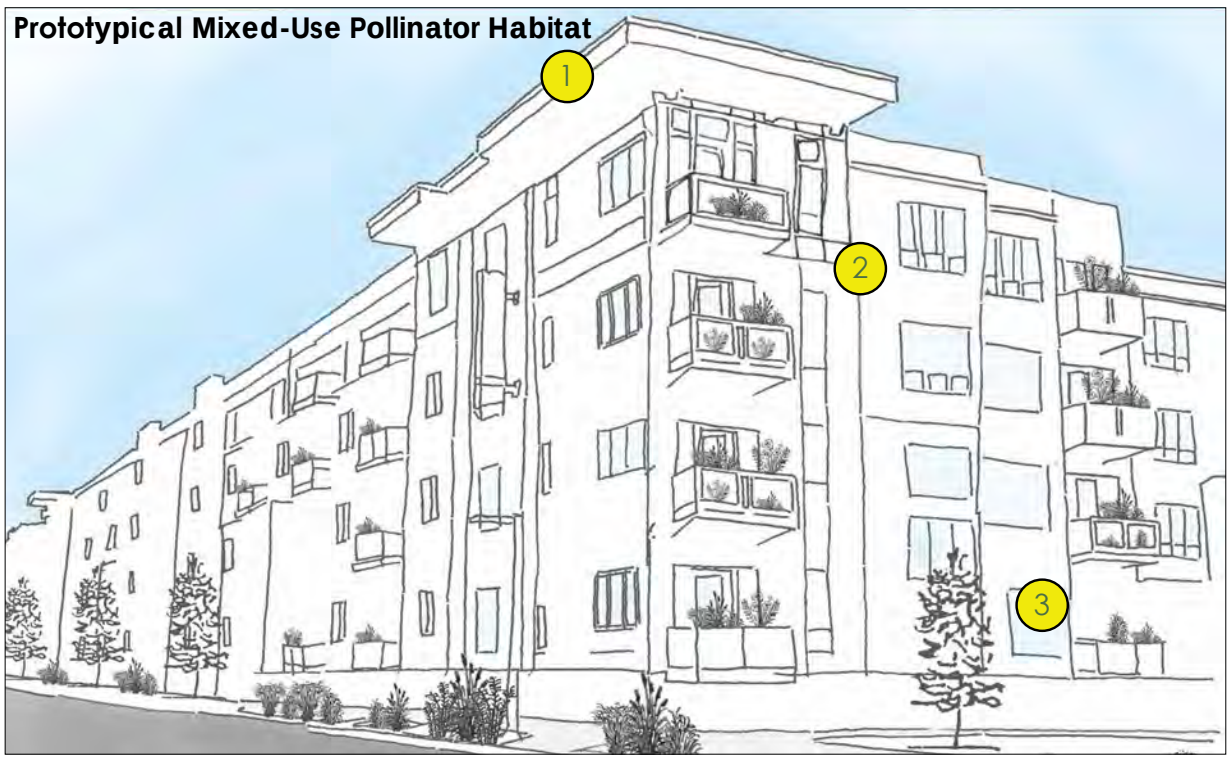
6 APARTMENT

Natural, native habitats in apartment and mixed-use developments can be platforms to sustain pollinators. In this poster, we discuss solutions to three major challenges of pollinator implementation, in addition to the benefits the residents of Ramsey can realize by implementing small changes in mixed-use developments.

Green roof

Balcony planter box

Native trees



ECONOMIC BENEFITS

- **Local businesses**, such as local plant nursery Green Valley Greenhouse, can **benefit from residents purchasing** their products to furnish their urban green spaces.
- Decreased water runoff from high-density buildings implementing pollinator habitats **reduces stress on municipal storm water infrastructure**.

ENVIRONMENTAL BENEFITS

- Because smaller pollinators do not fly more than 200 yards away from their nest, **providing bee boxes and hotels in an urban area** can draw in pollinators and subsequent benefits into the city.
- **Native plants in rain gardens are more water efficient compared to traditional plantings and control pollution** from storm water runoff.
- Plantings absorb more water and are more stable, and the **resulting improved soils** allow ground water to be replenished more efficiently.

EQUITABLE BENEFITS

- Having pollinator **habitat within dense urban centers** allows pollinators to survive where they would otherwise be unable. This allows more people to **enjoy the benefits of pollinators** and the **positive externalities** they provide.
- Adding to existing landscaping, or changing the existing landscape to pollinator habitat, will make the city more sustainable by **decreasing water usage, improving soil and air quality**, and potentially increase pollination rates in local agriculture or gardens.

CHALLENGES	OPPORTUNITIES	IMPLEMENTATION
Developing land without considering effects on natural resources reduces pollinator habitats, which provide nesting areas and environmental services.	Apartments and mixed-use developments can use rooftops and balconies to provide nesting habitat for pollinators.	• Bee blocks • Uncompacted soil in landscaping • Bee hotels • Green roofs
Mixed-use developments can disrupt pollinator habitat connectivity, making it difficult for pollinators to access essential resources.	Large buildings can provide refuge for pollinators traveling between open spaces, and can help establish urban pollinator populations.	• Floor boxes on balconies • Green roofs • Landscaping ordinances for natural plants
Using all available spaces within a mixed-use, urban development for pollinator habitats allows for increased biodiversity.	It is important to provide a wide range of native plant types. This accommodates the needs of many types of pollinators and fulfills the year-round bloom cycle.	• Planter boxes with a variety of plants • Prioritizing native species of plants

See poster 9 for Ramsey-specific opportunities

High-density, mixed-use developments provide a unique opportunity for native habitats within the Center of Ramsey (COR), allowing pollinators in Ramsey to thrive. In the next poster, we will look at how public park spaces can provide habitats for both humans and pollinators.

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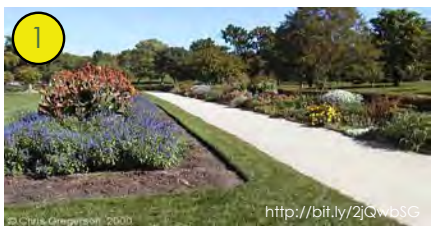
Open Space

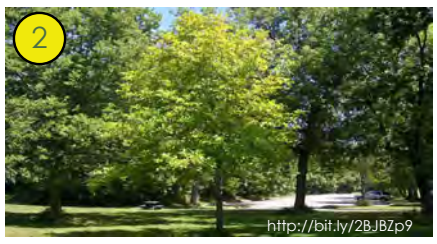
7
OPEN SPACE

Public land offers larger swatches of open space that preserve natural landscapes for pollinators and improve living conditions for residents through exposure to diverse greenscapes. In this poster, we discuss strategies to create diverse habitats within public parks.

Native plants



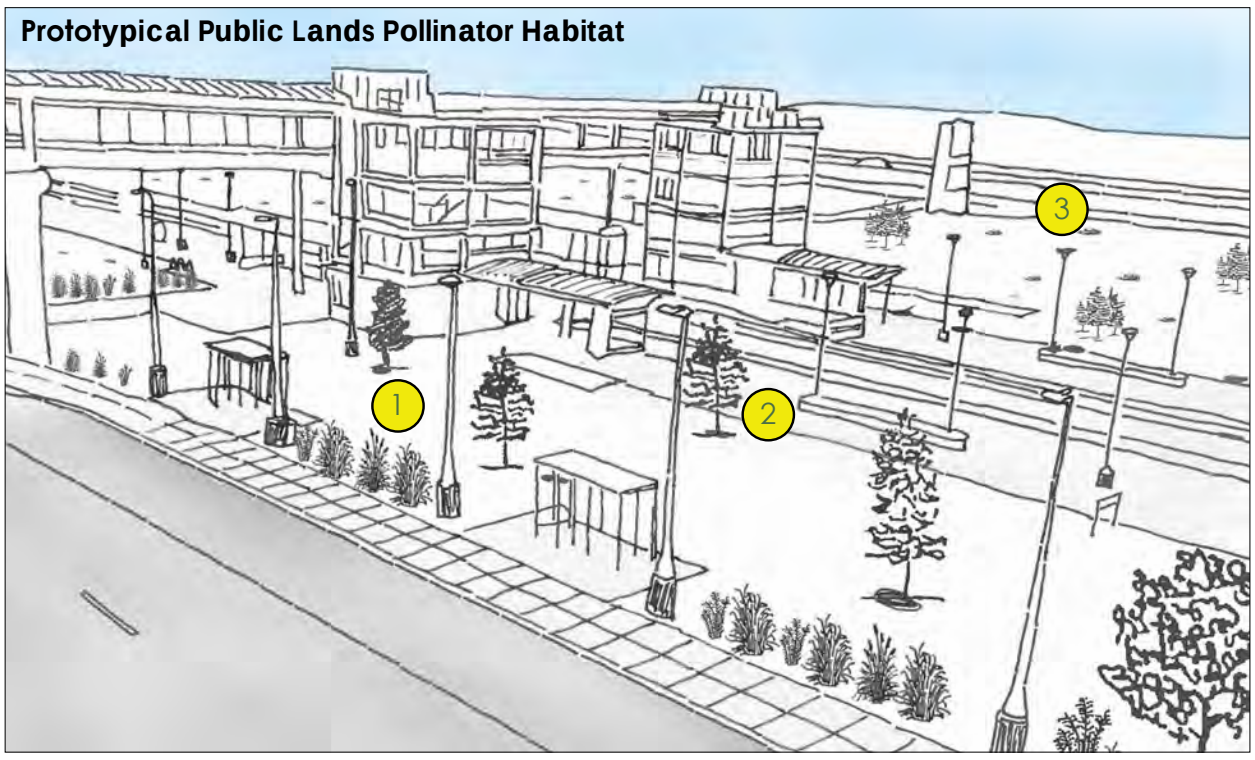
Native trees



Greenways

(To explore greenway opportunities, see Circle of Ramsey posters)

Prototypical Public Lands Pollinator Habitat



ECONOMIC BENEFITS

- Pollinator habitats are **better suited to natural environments** and are more efficient for drainage. Fields will be **usable more frequently** for recreation activity.
- Seeds can be collected from pollinator plants and used for **further expansion of native park landscapes**.
- Parks with pollinator habitat may require less maintenance, **minimizing cost** while providing greater **environmental benefits.**

ENVIRONMENTAL BENEFITS

- Large patches of prairie provide **better water recharge capabilities,** and **double the infiltration rates** of standard turf grass.
- Pollinator grasses offer **increased resistance to drought and flooding**, and survive with **fewer resources and less maintenance**.

EQUITABLE BENEFITS

- Public landscapes provide **higher density developments access to open space,** while connecting the rural, agricultural landscapes in Ramsey with the urbanized areas near The COR.
- Open space provides **educational opportunities** for park-goers regarding the benefits of native plantings, as well as demonstration plots that show how they can **implement changes in their own yards**.

CHALLENGES	OPPORTUNITIES	IMPLEMENTATION
• **Open spaces designed without pollinator habitats diminish natural resources that provide nesting areas and environmental services.**	• Parklands can be planted with natural vegetation, thus mimicking the productive landscapes that were lost to development.	• Create designated pollinator gardens within park space • Install large-scale bee boxes or hotels
• **Open spaces ideal for pollinators are often disconnected, making it difficult for pollinators to access resources needed for survival.**	• Plant and preserve parklands located close to trails, natural corridors, and long transportation corridors.	• Promote development of larger open spaces rather than small unproductive fragments.
• **Not having enough native plant diversity in public parks decreases pollinator presence.**	• Increasing the diversity of plant types in public spaces can dramatically increase pollinator presence. • Mix in native landscapes with typical recreation park fields to create hybrids.	• Plant native species that may be less desirable to homeowners

**See poster 9 for Ramsey-specific opportunities*

Open space can provide ecological connectivity within an urban environment and large areas of pollinator habitat. Pollinator habitats rely on movement of pollinators between landscapes to fulfill their productive capacities. In the next poster, we look at the final land use type: transportation corridors.

PA5211: Land Use Planning / Instructor: Fernando Burga PhD.

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City of RAMSEY

Bee-ing Ramsey

Transportation Corridors

8 CORRIDORS

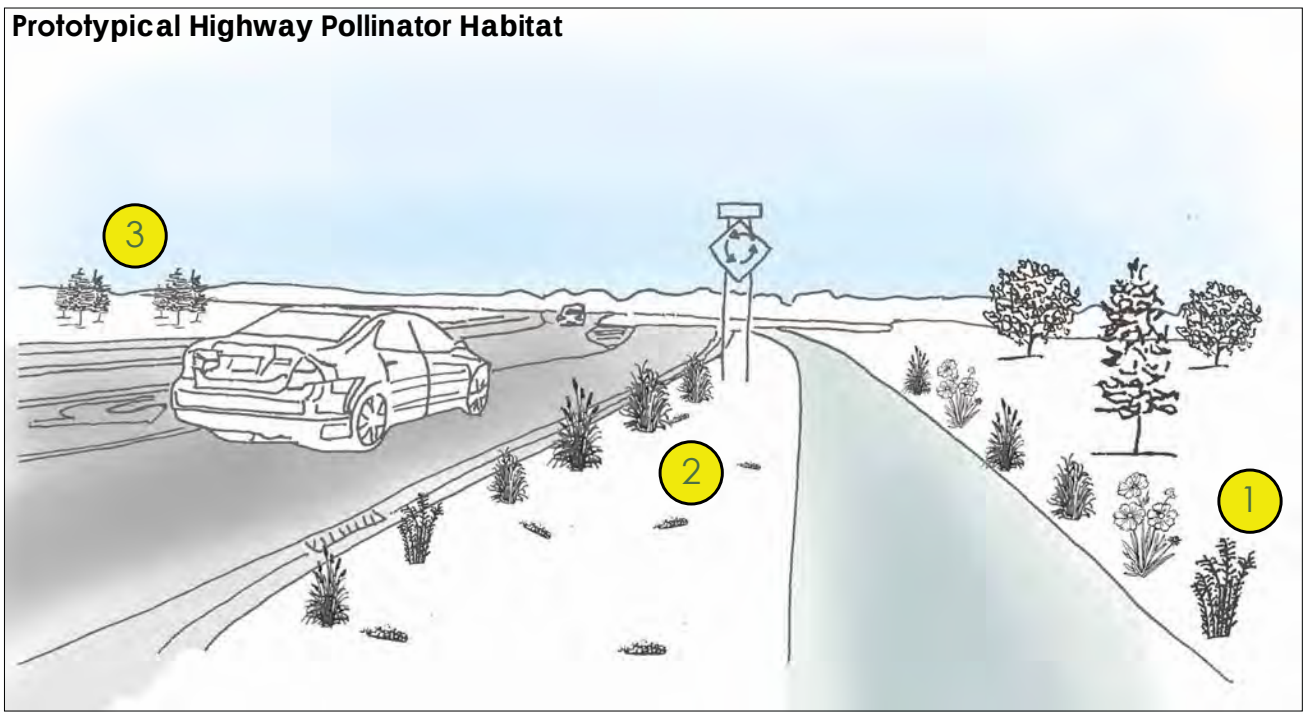
Creating pollinator habitats along transportation corridors can decrease costly maintenance while providing environmental benefits for both Ramsey and pollinators. In this poster, we examine ways that highways and medians provide extensive pollinator habitats with attention towards landscaping with native plants.

1 Native flowers

2 Habitat in medians

3 Native trees

Prototypical Highway Pollinator Habitat



ECONOMIC BENEFITS

- The **cost of maintenance** along highways and corridors **will decrease** because established pollinator habitat will not need to be mowed frequently.
- **Infrastructure costs will decrease** because more water will be filtered into the ground, reducing the need for storm water pipes.
- **Roadside pollinator landscapes** reduce snow drifting and water overflow, lessening city service costs.

ENVIRONMENTAL BENEFITS

- There will be reduced greenhouse gas emissions from **less frequent mowing along highways and medians.**
- Improved soil quality will **replenis and filter** ground water and decrease soil erosion.
- **Denser** plant and tree **coverage** near highways will help **decrease urban heat island effect.**
- Native canopy cover and plantings will provide habitat for pollinators of all types, **increasing biodiversity.**

EQUITABLE BENEFITS

- Connecting pollinators habitats within urban centers can **improve air and water quality**.
- **Health benefits from access to open space** will be enjoyed by those living **in the core of the city as well as along the periphery.**
- **Native plants decrease runoff from highways and reduce flooding** because of increased soil drainage. This can have dramatic effects for **localities prone to flooding**.

CHALLENGES	OPPORTUNITIES	IMPLEMENTATION
Highway development without considering natural resources can reduce pollinator habitats which provide nesting areas and environmental services.	Green spaces along corridors and highways can be converted into native landscape to provide large amounts of nesting ground and improve the quality of the soil.	Leave fallen trees for pollinator nests Prevent soil from compacting and leave bare patches for ground nesters.
Roadside spaces next to highways are underutilized as patches of native plants that can connect pollinator habitats.	Long stretches of native habitat that run parallel to corridors and highways can connect pollinators to different urban areas and provide large quantities of resources.	Replace turf grass with native plants along stretches of highway
Current green spaces near highways have low diversity in plant types that can support pollinator species.	Increasing the diversity of plant types in public spaces can dramatically increase pollinator presence.	Sow native seed mixes that require minimal care

*See poster 9 for Ramsey-specific opportunities

There is ample space along highways that can be used to connect pollinator habitats throughout the city. In the final poster, we take a look at how these four land-use types and ordinances can work together to preserve Ramsey's natural resources.

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Bee-ing Ramsey

What Ramsey Can Do

9 OPPORTUNITIES

Residential

- Plant native gardens within front and back yards
- Place bee boxes or hotels, and leave bare patches for pollinator nests

Implementation

- Engage and educate the public on native plantings
- Create more native plantings on city owned land

Apartments

- Use native landscaping around the complex
- Allow residents to have planter boxes with native flowers on balconies

OPPORTUNITIES FOR RAMSEY

Municipal Ordinances

- Define key native plant and pollinator terms
- Specify native plants that are best suited to Ramsey
- Use native plants to filter storm runoff and improve ground water

Open Space

- Balance recreational space with pollinator habitat
- Choose diverse plants that may not be used in other land use areas to attract many species of pollinators

Corridors

- Use native plants to decrease maintenance and mowing along highways
- Plant along long stretches of road for connectivity

To protect pollinator habitat and natural resources, the City of Ramsey should implement ordinances that encourage natural landscapes on residential lots, apartments, open spaces, and along highways. The efficiency of pollinator plantings brings economic benefits to the city by decreasing maintenance, lowering water usage, and improving city infrastructure. Preserving and restoring native plants will increase soil and air quality throughout the city, and improve the health of all residents.

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